

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A non-invasive blood constituents measuring instrument comprising: a light source for irradiating light including plural ~~waveforms~~ wavelengths to a living body whose blood constituents are unknown; a light detector to detect light transmitted through the living body or reflecting ~~thereon~~ therefrom; a spectrum analyzer to which the output signal of the light detector is supplied and which analyzes spectrum of the light transmitted through the living body or reflected therefrom at different times; a spectrum subtraction generator to generate spectrum subtraction from the spectrum of the light measured by the spectrum analyzer at different times; and a blood constituents predictor into which the output data of the spectrum subtraction generator is input and which outputs the blood constituents; wherein the blood constituents predictor compares the spectrum subtraction of the unknown blood constituents with a plurality of sample spectrum subtractions obtained non-invasively from a living body whose blood constituents are known and predicts the blood constituents of the unknown blood constituents.

2. (Currently Amended) A non-invasive blood constituents measuring instrument claimed in claim 1, wherein the blood constituents predictor is provided with a multi-regression analyzing model using ~~plural whole blood sample spectrum data having known blood constituent~~ the plurality of the sample spectrum subtractions as an explanatory variable and blood constituent values as an objective variable, wherein the spectrum subtraction data obtained from ~~bloods~~ living bodies having ~~known~~ unknown blood constituents are input into the multi-regression analyzing model as an explanatory variable, the objective variable is computed from the multi-regression analyzing model and output as a blood constituent value.

3. (Original) A non-invasive blood constituents measuring instrument claimed in claim 2, wherein the multi-regression analyzing model is a regression analysis model using the PLS or PCR method.

4. (Currently Amended) A non-invasive blood constituent measuring instrument claimed in claim 3, wherein blood constituents of the ~~plural whole blood samples~~ living bodies, from which the sample spectrum subtractions are obtained, are arranged at a specified interval within ~~the~~ a range of concentration including ~~the~~ a physiological concentration range.

5. (Original) A non-invasive blood constituent measuring instrument claimed in claim 4, wherein the light including the plural wavelengths is the light in the near infrared range.

6. (Original) A non-invasive blood constituent measuring instrument claimed in claim 5, wherein the light includes plural wavelengths in the wavelength band of 800 ~ 2400 nm arranged at an interval of about 3 nm.

7. (Currently Amended) A non-invasive blood constituent measuring instrument claimed in claim 6, wherein the light including the plural wavelengths is generated by separating the light from the light source by ~~the~~ an active spectroscopy.

8. (Original) A non-invasive blood constituent measuring instrument claimed in claim 7, wherein the active spectroscopy separates the light in the near infrared range at an interval of about 50 ms period of time.

9. (Currently Amended) A non-invasive blood glucose concentration measuring instrument comprising: a light source to irradiate a light containing plural wavelengths to a living body whose blood glucose concentration is unknown; a light detector to detect the light transmitted through a living body or reflected therefrom; a spectrum analyzer to which the output signal of the light detector is supplied and which analyzes spectrum of the light transmitted through the living body or reflected therefrom at different times; a spectrum subtraction generator to generate

spectrum subtraction from the spectrum of the light measured by the spectrum analyzer at different times; and a blood glucose concentration predictor into which the output data of the spectrum subtraction generator is input and which outputs the blood glucose concentration; wherein the blood glucose concentration predictor compares the spectrum subtraction of the unknown glucose concentration with a plurality of sample spectrum subtractions obtained non-invasively from a living body whose blood glucose concentration is known and predicts the blood glucose concentration of the unknown blood constituents.

10. (Currently Amended) A non-invasive blood glucose concentration measuring instrument claimed in claim 925, wherein the multi-regression analyzing model is a regression analysis model using the PLS or PCR method.

11. (Currently Amended) A non-invasive blood glucose concentration measuring instrument claimed in claim 10, wherein blood constituents of the plural whole blood samples glucose concentrations of the living bodies, from which the sample spectrum subtractions are obtained, are arranged at a specified interval within ~~the~~ a range of concentration including ~~the~~ a physiological concentration range.

12. (Original) A non-invasive blood glucose concentration measuring instrument claimed in claim 11, wherein the light including the plural wavelengths is the light in the near infrared range.

13. (Original) A non-invasive blood glucose concentration measuring instrument claimed in claim 12, wherein the light includes plural wavelengths in the wavelength band of 800 ~ 2400 nm arranged at an interval of about 3 nm.

14. (Currently Amended) A non-invasive blood glucose concentration measuring instrument

claimed in claim 13, wherein the light including the plural wavelengths is generated by separating the light from the light source by ~~the~~an active spectroscopy.

15. (Currently Amended) A non-invasive blood glucose concentration measuring instrument as ~~set forth~~claimed in claim 14, wherein the active spectroscopy separates the light in the near infrared range at an interval of about 50 ms period of time.

~~17~~16. (Currently Amended) A non-invasive blood glucose concentration measuring instrument claimed in claim ~~12~~9, wherein the ~~plural whole blood samples~~plurality of sample spectrum subtractions obtained from a living body include protein containing albumin.

~~18~~17. (Currently Amended) A non-invasive blood glucose concentration measuring instrument claimed in claim ~~17~~16, wherein the concentrations of the albumin ~~is~~are about 3.0 ~ 6.0 g/dl.

~~19~~18. (Currently Amended) A non-invasive blood glucose concentration measuring instrument claimed in claim ~~18~~17, wherein the ~~plural whole blood samples contain blood having~~plurality of sample spectrum subtractions obtained from a living body have different hematocrit values.

~~20~~19. (Currently Amended) A method for non-invasively measuring blood constituents comprising the steps of: irradiating a light containing plural wavelengths to a living body whose blood constituents are unknown; detecting light transmitted through or reflected from the living body and converting it into an electric signal; analyzing spectrum of the light transmitted through the living body or reflected therefrom at different times using the converted electric signal; generating spectrum subtraction from the spectrum of the light at different times; and predicting corresponding blood constituents from the spectrum subtraction; wherein the spectrum subtraction of the unknown blood constituents is compared with a plurality of sample spectrum

subtractions obtained non-invasively from a living body whose blood constituents are known and thereby predicting the blood constituents of the unknown blood constituents.

~~2120.~~ (Currently Amended) A method for non-invasively measuring blood constituents claimed in claim ~~2019~~, wherein the step of predicting the blood constituents further comprises; preparing a multi-regression analyzing model, to which spectrum data of plural ~~whole blood samples~~ sample spectrum subtractions, having known of which blood constituents, are known are input as explanatory variables and outputs blood constituents as objective variables, inputting the spectrum subtraction data obtained from ~~blood of which unknown~~ blood constituents is not known as explanatory variables, and outputting the blood constituents as the objective variables.

~~2221.~~ (Currently Amended) A method for non-invasively measuring blood constituents claimed in claim ~~2122~~, wherein the multi-regression analyzing model is constructed using the PLS or PCR method.

~~2322.~~ (Currently Amended) A method for non-invasively measuring blood glucose concentrations comprising the steps of: irradiating a light containing plural wavelengths to a living body whose blood glucose concentration is unknown; detecting light transmitted through or reflected from the living body and converting it into an electric signal; analyzing spectrum of the light transmitted through the living body or reflected therefrom at different times using the converted electric signal; generating spectrum subtraction from the spectrum of the light at the different times; and predicting corresponding blood glucose concentration from the spectrum subtraction; wherein the step of blood predicting the glucose concentration further comprises comparing the spectrum subtraction of the unknown glucose concentration with a plurality of sample spectrum subtractions which are obtained non-invasively from a living body whose blood glucose concentration is known and predicting the blood glucose concentration of the unknown blood constituents.

2423. (Currently Amended) A method for non-invasively measuring blood glucose concentrations claimed in claim 2322, wherein the step of predicting the blood glucose concentration further comprises; preparing a multi-regression analyzing model, to which spectrum data of plural whole blood samples of which blood glucose concentrations are known are input as explanatory variables and outputs blood glucose concentrations as objective variables, inputting the spectrum subtraction data obtained from blood of which blood glucose ~~concentration is constituents concentrations are~~ not known as explanatory variables, and outputting the blood glucose concentration as the objective variables.

2524. (Currently Amended) A method for non-invasively measuring blood glucose concentrations claimed in claim 2423, wherein the multi-regression analyzing model is constructed using the PLS or PCR method.

25. (New) A non-invasive blood glucose concentration measuring instrument claimed in Claim 9, wherein the blood glucose concentration predictor is provided with a multi-regression analyzing model using the plurality of the sample spectrum subtractions as an explanatory variable and blood glucose values as an objective variable, wherein the spectrum subtraction data obtained from living bodies having unknown blood constituents are input into the multi-regression analyzing model as an explanatory variable, the objective variable is computed from the multi-regression analyzing model and output as a blood constituent value.